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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,464	03/30/2001	Jerry Ok	S116-USA	5748

28284 7590 02/05/2008

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EXAMINER	
NGUYEN, BINH AN DUC	
ART UNIT	**PAPER NUMBER**
3714	

MAIL DATE	DELIVERY MODE
02/05/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/823,464	OK ET AL.	
	Examiner	Art Unit	
	Binh-An D. Nguyen	3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2007* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 37-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 37-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

The Amendment filed November 11, 2007 has been received. According to the Amendment, claims 1, 8, 37, and 39 have been amended; claims 18-36 have been previously canceled.

Currently, claims 1-17 and 37-40 are pending in the application.

Acknowledgment has been made.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 8, 9, 12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szobonya (3,517,437).

Referring to claims 1, 8 and 9, Szobonya teaches a method of fabricating a hermetic electrical feedthrough (Figs.3-7) comprising: providing an unfired un-sintered ceramic sheet having upper and lower forming a hole in said ceramic sheet extending from said upper surface toward said lower surface (2:12-25); inserting a wire into said hole (3:6-22); firing said sheet and wire to a temperature sufficient to sinter the sheet material and cause it to form a hermetic compression seal around said wire (3:23-63). *Note that, Szobonya further teaches the terminal pin (10) may be positioned in the hole*

(16) so that the top surface of the pin lies a small distance (26)(Fig4) below the top surface of the base member (18); since the firing shrinkage characteristics of refractory base materials may be determined, the distance (26) may be calculated beforehand, with the result that after the firing process, the top surface of the terminal pin (10) and the base (18) will be substantially flush (3:23-48). Szobonya does not explicitly teach the limitations of the single or multiple intermediate "blind holes" and removing sufficient sheet material from said sheet lower surface to expose said wire (or removing sheet material under the blind holes to form through holes containing the wires), however, these are design choice since forming blind holes, inserting wire, and then remove material to form the through hole containing the wire does not bring unexpected results to the process. Further, regarding the step of removing sufficient sheet material from said sheet lower surface to expose said wire (claims 1, 8, and 9), it is notoriously well known in the industry to furnish final manufactured products by remove chips or unwanted materials. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the process Szobonya, by forming a blind hole on a substrate prior to forming the through hole, to come up with a different approach to form a hermetic electrical feedthrough that requires lower manufacture precision thus lower manufacturing cost.

Referring to claims 2 and 12, Szobonya teaches ceramic sheet is formed of material comprised alumina which anticipated applicant's claim of ceramic sheet is formed of material comprised of at least 99% aluminum oxide.

Referring to claim 17, the firing process of Szobonya as mentioned above (3:23-48) has sintered the ceramic material.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuhara et al. (5,368,220) in view of Chirino et al. (3,999,004).

Referring to claims 1, 8, and 9, Mizuhara et al. teaches a method of fabricating a hermetic electrical feedthrough comprising: providing an unfired pre-sintered (2:38-49) ceramic sheet having upper and lower surfaces; forming a hole 17 in said ceramic sheet extending from said upper surface toward said lower surface; inserting a wire into said hole (Fig. 4); firing said sheet and wire to a temperature sufficient to sinter the sheet material and cause it to form a hermetic compression seal around said wire (4:37-41). Note that, the **pre-sintered ceramic** article of Mizuhara et al. (2:38-49) is equivalent to the amended **un-sintered ceramic** since the un-sintered ceramic would be sintered at the end of the manufacturing process as claimed by the applicant. Mizuhara et al. does not explicitly teach the forming a single or multiple intermediate blind holes in ceramic sheet for insertion of conductive wires or pins (claims 1 and 8). Chirino et al., however, teaches forming multiple blind holes in ceramic sheet (Figures 2, 5, 6, and 9) for insertion of pins 17. Regarding the step of removing sufficient sheet material from said sheet lower surface to expose said wire (claims 1, 8, and 9), it is notoriously well known in the industry to furnish final manufactured products by remove chips or unwanted materials. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide multiple wire insertion blind holes on unfired

ceramic sheets, as taught by Chirino et al. to Mizuhara et al.'s method of manufacturing hermetically sealed conductive feedthrough, to enhance a stronger hermetical sealing while requiring low manufacture precision thus lower manufacture cost and increase profits.

Referring to claims 2 and 12, Mizuhara et al. teaches said ceramic sheet is formed of material comprised of aluminum oxide (alumina) (7:17-20).

Referring to claims 5, 13, and 14, Mizuhara et al. teaches said alloy wire having core formed of platinum (5:9-15).

Further, the limitations of ceramic sheet is less than 40 or 15 mils thick (claims 3, 4 and 15); and said wire has a diameter of less than 20 or 10 mils (claims 6, 7, and 16); and compound ceramic material of aluminum oxide and zirconia (claim 11) are design choices since they do not bring unexpected results to the process.

Furthermore, regarding the limitation of dicing the ceramic sheet to form multiple dies (claim 10), this limitation is notoriously well known in the industry, especially in chip making, e.g., wafer dicing.

Referring to claim 17, the limitation of said firing step includes subjecting said sheet to a temperature sufficient to sinter the ceramic material is inherent from the firing process of Mizuhara et al. (2:38-49).

Claims 37 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szobonya (3,517,437) in view of Poniatowski et al. (DE19651851).

Referring to claim 37, Szobonya teaches a method of fabricating a hermetic electrical feedthrough (Figs.3-7) comprising: providing an un-sintered ceramic sheet having upper and lower surfaces; forming a hole in said ceramic sheet extending from said upper surface toward said lower surface (2:12-25); inserting a wire into said hole (3:6-22); firing said sheet and wire to a temperature sufficient to sinter the sheet material and cause it to form a hermetic compression seal around said wire (3:23-63). *Note that, Szobonya further teaches the terminal pin (10) may be positioned in the hole (16) so that the top surface of the pin lies a small distance (26)(Fig4) below the top surface of the base member (18); since the firing shrinkage characteristics of refractory base materials may be determined, the distance (26) may be calculated beforehand, with the result that after the firing process, the top surface of the terminal pin (10) and the base (18) will be substantially flush (3:23-48).* Szobonya does not explicitly teach the limitations of the single or multiple "blind holes" and removing sufficient sheet material from said sheet lower surface to expose said wire (or removing sheet material under the blind holes to form through holes), however, these are design choice since forming blind holes and then remove material to form the through hole does not bring unexpected results to the process. Further, regarding the step of removing sufficient sheet material from said sheet lower surface to expose said wire, it is notoriously well known in the industry to furnish final manufactured products by remove chips or unwanted materials. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the process Szobonya, by forming a blind hole on a substrate prior to forming the through hole, to come up with a different

approach to form a hermetic electrical feedthrough that requires lower manufacture precision thus lower manufacturing cost. Furthermore, Szobonya does not explicitly teach the limitation of said firing occurs by ramping up to a first temperature at a first heating rate; then ramping up to a second temperature higher than the first temperature at a second heating rate different from the first heating rate. Poniatowski et al., however, teaches a method of producing platinum-coated oxide ceramic object wherein firing ceramic and platinum occurs by ramping up to a first temperature at a first heating rate; then ramping up to a second temperature higher than the first temperature at a second heating rate different from the first heating rate (page 2, lines 34-35 of the translation version). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the ceramic firing techniques of Poniatowski et al. to the method of fabricating a hermetic electrical feedthrough, as taught by Szobonya to evenly distribute stress and provide a uniform tied fit manufactured metal-ceramic product.

Referring to claim 39, Poniatowski et al. teaches said second heating temperature is followed by a dwell interval and a cool-to-room-temperature interval, e.g., one hour preservation time with 1600 DEG C, (page 2, lines 34-35 of the translation version).

Claims 37, 39, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuhara et al. (5,368,220) in view of Chirino et al. (3,999,004), and further inview of Poniatowski et al. (DE19651851).

Referring to claim 37, Mizuhara et al. teaches a method of fabricating a hermetic electrical feedthrough comprising: providing an unfired pre-sintered (2:38-49) ceramic sheet having upper and lower surfaces; forming a hole 17 in said ceramic sheet extending from said upper surface toward said lower surface; inserting a wire into said hole (Fig. 4); firing said sheet and wire to a temperature sufficient to sinter the sheet material and cause it to form a hermetic compression seal around said wire (4:37-41). Note that, the **pre-sintered ceramic** article of Mizuhara et al. (2:38-49) is equivalent to the amended **un-sintered ceramic** since the un-sintered ceramic would be sintered at the end of the manufacturing process as claimed by the applicant. Mizuhara et al. does not explicitly teach the forming a single or multiple blind holes in ceramic sheet (claims 1 and 8). Chirino et al., however, teaches forming multiple blind holes in ceramic sheet (Figures 2, 5, 6, and 9). Regarding the step of removing sufficient sheet material from said sheet lower surface to expose said wire (claims 1, 8, and 9), it is notoriously well known in the industry to furnish final manufactured products by remove chips or unwanted materials. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to combine Mizuhara et al.'s method of manufacturing hermetically sealed conductive feedthrough with a method of mounting conductor on ceramic substrate, as taught by Chirino et al., to enhance a stronger hermetical sealing method that has lower manufacture cost thus increase profits. Mizuhara et al. and Chirino et al. do not explicitly teach the limitation of said firing occurs by ramping up to a first temperature at a first heating rate; then ramping up to a second temperature higher than the first temperature at a second heating rate different

from the first heating rate. Poniatowski et al., however, teaches a method of producing platinum-coated oxide ceramic object wherein firing ceramic and platinum occurs by ramping up to a first temperature at a first heating rate; then ramping up to a second temperature higher than the first temperature at a second heating rate different from the first heating rate (page 2, lines 34-35 of the translation version). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the ceramic firing techniques of Poniatowski et al. to the method of fabricating a hermetic electrical feedthrough, as taught by Mizuhara et al. and Chirino et al. to evenly distribute stress and provide a uniform tied fit manufactured metal-ceramic product.

Referring to claim 39, Poniatowski et al. teaches second heating temperature is followed by a dwell interval and a cool-to-room-temperature interval, e.g., one hour preservation time with 1600 DEG C, (page 2, lines 34-35 of the translation version).

Referring to claim 40, Mizuhara et al. teaches said alloy wire having core formed of platinum (5:9-15).

Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Szobonya (3,517,437) and Poniatowski et al. (DE19651851) as applied to claim 37 above, and further in view of Greuter et al. (5,071,828).

Szobonya (3,517,437) and Poniatowski et al. (DE19651851) teach all limitations of claim 37 above.

Referring to claim 38, Poniatowski et al. (DE19651851) further teaches the first temperature is about 600 °C, e.g., 620 °C and the second temperature is 1600 °C (page

2, lines 34-35 of the translation version). Szobonya and Poniatowski et al. do not explicitly teach the first heating rate is 1 °C/minute and the second heating rate is 5 °C /minute. Greuter et al., however, teaches a method for manufacturing a ceramic high temperature superconductor comprising heating the ceramic at first heating rate about 1 °C/minute, e.g., 50 °C/hour; and heating the ceramic at second heating rate about 5 °C/minute, e.g., 300 °C/hour (5:25-35). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the heating rates of ceramic high temperature superconductor of Greuter et al. to the hermetic electrical feedthrough, as taught by Szobonya and Poniatowski et al. to increase the conductivity of the embedded metal thus increase manufacture quality of electronic product.

Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuhara et al. (5,368,220), Chirino et al. (3,999,004), and Poniatowski et al. (DE19651851) as applied to claim 37 above, and further in view of Greuter et al. (5,071,828).

Mizuhara et al. (5,368,220), Chirino et al. (3,999,004), and Poniatowski et al. (DE19651851) teach all limitations of claim 37 above.

Referring to claim 38, Poniatowski et al. (DE19651851) further teaches the first temperature is about 600 °C, e.g., 620 °C and the second temperature is 1600 °C (page 2, lines 34-35 of the translation version). Mizuhara et al., Chirino et al., and Poniatowski et al. do not explicitly teach the first heating rate is 1 °C/minute and the second heating rate is 5 °C /minute. Greuter et al., however, teaches a method for manufacturing a

ceramic high temperature superconductor comprising heating the ceramic at first heating rate about 1 °C/minute, e.g., 50 °C/hour; and heating the ceramic at second heating rate about 5 °C/minute, e.g., 300 °C/hour (5:25-35). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the heating rates of ceramic high temperature superconductor of Greuter et al. to the hermetic electrical feedthrough, as taught by Mizuhara et al., Chirino et al., and Poniatowski et al. to increase the conductivity of the embedded metal thus increase manufacture quality of electronic product.

Response to Arguments

Applicant's arguments filed November 14, 2007 have been fully considered but they are not persuasive.

The applicant argued Szobonya does not teach a method for hermetically sealing a wire by forming intermediate blind holes in ceramic sheet, inserting the wire, firing sheet and wire and removing sheet material to expose the wire (applicant's remark, page 7, 2nd full paragraph; and page 9, last paragraph bridging page 10) is deemed not to be persuasive. Szobonya teaches a method of fabricating a hermetic electrical feedthrough (Figs.3-7) comprising providing an unfired un-sintered ceramic sheet having upper and lower forming a hole in said ceramic sheet extending from said upper surface toward said lower surface (2:12-25); inserting a wire into said hole (3:6-22); firing said sheet and wire to a temperature sufficient to sinter the sheet material and cause it to form a hermetic compression seal around said wire (3:23-63). It is noted that

Szobonya does not explicitly teach the limitations of the single or multiple intermediate "blind holes" and removing sufficient sheet material from said sheet lower surface to expose said wire (or removing sheet material under the blind holes to form through holes containing the wires), however, these are design choice since forming blind holes, inserting wire, and then remove material to form the through hole containing the wire does not bring unexpected results to the process. Further, regarding the step of removing sufficient sheet material from said sheet lower surface to expose said wire (claims 1, 8, and 9), it is notoriously well known in the industry to furnish final manufactured products by remove chips or unwanted materials. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the process Szobonya, by forming a blind hole on a substrate prior to forming the through hole, to come up with a different approach to form a hermetic electrical feedthrough that requires lower manufacture precision thus lower manufacturing cost. Thus, the teaching of Szobonya in view of one of ordinary skill in the art does make obvious the method claimed by the applicant.

The applicant argued Mizuhara et al. in view of Chirino et al. does not teach a method for hermetically sealing a wire by forming intermediate blind holes in ceramic sheet, inserting the wire, firing sheet and wire and removing sheet material to expose the wire (applicant's remark, page 7, 1st paragraph to page 9, 1st paragraph) is deemed not to be persuasive. Mizuhara et al. teaches a method of fabricating a hermetic electrical feedthrough comprising: providing an unfired pre-sintered (2:38-49) ceramic sheet having upper and lower surfaces; forming a hole 17 in said ceramic sheet

extending from said upper surface toward said lower surface; inserting a wire into said hole (Fig. 4); firing said sheet and wire to a temperature sufficient to sinter the sheet material and cause it to form a hermetic compression seal around said wire (4:37-41). Note that, the **pre-sintered ceramic** article of Mizuhara et al. (2:38-49) is equivalent to the amended **un-sintered ceramic** since the un-sintered ceramic would be sintered at the end of the manufacturing process as claimed by the applicant. And Chirino et al. teaches forming multiple blind holes in ceramic sheet (Figures 2, 5, 6, and 9) for insertion of pins 17. Regarding the step of removing sufficient sheet material from said sheet lower surface to expose said wire (claims 1, 8, and 9), it is notoriously well known in the industry to furnish final manufactured products by remove chips or unwanted materials. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide multiple wire insertion blind holes on unfired ceramic sheets, as taught by Chirino et al. to Mizuhara et al.'s method of manufacturing hermetically sealed conductive feedthrough, to enhance a stronger hermetical sealing while requiring low manufacture precision thus lower manufacture cost and increase profits. Thus, the teaching of Mizuhara et al. in view of Chirino et al. does make obvious the method claimed by the applicant.

The applicant argued Szobonya in view of Poniatowski et al. does not teach the limtations of claims 37 and 29 (applicant's remark, page 9, last full paragraph to page 10, 2nd paragraph; and page 11, lines 7-12) is deemed not to be persuasive. Szobonya teaches a method of fabricating a hermetic electrical feedthrough as being addressed above (See response to arguments regarding the teaching of Szobonya). *Note that,*

Szobonya further teaches the terminal pin (10) may be positioned in the hole (16) so that the top surface of the pin lies a small distance (26)(Fig4) below the top surface of the base member (18); since the firing shrinkage characteristics of refractory base materials may be determined, the distance (26) may be calculated beforehand, with the result that after the firing process, the top surface of the terminal pin (10) and the base (18) will be substantially flush (3:23-48). Further note that, Szobonya does not explicitly teach the limitation of said firing occurs by ramping up to a first temperature at a first heating rate; then ramping up to a second temperature higher than the first temperature at a second heating rate different from the first heating rate. Poniatowski et al., however, teaches a method of producing platinum-coated oxide ceramic object wherein firing ceramic and platinum occurs by ramping up to a first temperature at a first heating rate; then ramping up to a second temperature higher than the first temperature at a second heating rate different from the first heating rate (page 2, lines 34-35 of the translation version). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the ceramic firing techniques of Poniatowski et al. to the method of fabricating a hermetic electrical feedthrough, as taught by Szobonya to evenly distribute stress and provide a uniform tied fit manufactured metal-ceramic product.

The applicant argued Mizuhara et al. in view of Chirino et al., and further in view of Poniatowski et al. does not teach a method for hermetically sealing a wire by forming intermediate blind holes in ceramic sheet, inserting the wire, firing sheet and wire and removing sheet material to expose the wire (applicant's remark, section D, pages 10-11;

and section F, pages 11-12) is deemed not to be persuasive. Mizuhara et al. in view of Chirino et al. teaches the method as being addressed above in the response. Further, Poniatowski et al. teaches a method of producing platinum-coated oxide ceramic object wherein firing ceramic and platinum occurs by ramping up to a first temperature at a first heating rate; then ramping up to a second temperature higher than the first temperature at a second heating rate different from the first heating rate (page 2, lines 34-35 of the translation version). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the ceramic firing techniques of Poniatowski et al. to the method of fabricating a hermetic electrical feedthrough, as taught by Mizuhara et al. and Chirino et al. to evenly distribute stress and provide a uniform tied fit manufactured metal-ceramic product.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh-An D. Nguyen whose telephone number is 571-272-4440. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pezzuto can be reached on 571-272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BN

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